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June 1960

IN THIS ISSUE

Vacuum Mirror Based on Aerodynamic Principles	258
Transitional Temporary Imme- diate Dentures	261
Clinical Applications of Oclu- sion and Articulation— Part Six	270
The Use of Rubber Impression Material for Restoration of Single Teeth	274
Clinical and Laboratory Suggestions	276
The Editor's Page	278
Medicine and the Biologic Sciences	279
Ortho-Angles	286
Announcement of Books Received	292

(A Complete Table of Contents
Appears on page 257)

Cover Illustration—Kielich
article, page 261



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About Our CONTRIBUTORS

VINCENT J. PISCITELLI, B.S. (St. Bonaventure University, 1930), D.D.S. (Loyola University, 1933) is in general practice. For his first appearance in *DIGEST* Doctor Piscitelli presents a description of a mouth mirror for use in dentistry to the development of which he has devoted several years. His title is A VACUUM MIRROR BASED ON AERODYNAMIC PRINCIPLES.

BRUNO B. KIELICH, JR., D.D.S. (St. Louis University, School of Dentistry, 1942) emphasizes prosthodontics in his practice. Doctor Kielich has lectured extensively to dental groups on the subjects of hypnosis, practice management, and prosthetic dentistry. The material in his article, TRANSITIONAL TEMPORARY IMMEDIATE DENTURES, in the current issue was presented before the Centennial Meeting of the American Dental Association, New York, September 1959.

LEO STOLL, D.D.S. (New York University College of Dentistry, 1931) is a general practitioner who has devoted many years to the study of occlusion and articulation. Doctor Stoll presents in the current issue the sixth installment of a serial article, CLINICAL APPLICATIONS OF OCCLUSION AND ARTICULATION.

JULIUS MICHMANN, D.M.D. (Muenchen University, Germany, 1933) is chief of the Department of Prosthetics, School of Dentistry, Hadassah Medical Organization, in Jerusalem, and has published widely on subjects in the prosthetic field. Doctor Michmann first published in *DIGEST* in 1948, and this month, with his co-author, SAMUEL PERLMUTTER, D.M.D. (School of Dentistry, Jerusalem, 1959) presents THE USE OF RUBBER IMPRESSION MATERIAL FOR CAST BASE RESTORATION OF SINGLE TEETH.

A Vacuum Mirror Based on Aerodynamic Principles <i>V. J. Piscitelli, B.S., D.D.S.</i>	258
Transitional Temporary Immediate Dentures <i>Bruno B. Kielich, Jr., D.D.S.</i>	261
Clinical Applications of Occlusion and Articulation—Part Six <i>Leo Stoll, D.D.S.</i>	270
Announcement of Books Received	273
The Use of Rubber Impression Material for Restoration of Single Teeth <i>Julius Michmann, D.M.D., and S. Perlmutter, D.M.D.</i>	274
Facial Sinuses of Dental Origin (An Abstract)	275
Clinical and Laboratory Suggestions	276
1. Sprues for Inlays. 2. Plaster Impression for Fixed Bridge. 3. Ease of Spatulation of Impression Materials. 4. Pulp Therapy. 5. Wax Pooling. 6. Forming a Die.	
The Editor's Page	278
Medicine and the Biologic Sciences	279
Contra-Angles	286
Pulmonary Infarction After Dental Extraction (An Abstract) <i>Crawford W. Adams, M.D., and James M. Hudgins, M.D.</i>	292
Tranquilizers and Operative Management (An Abstract)	292

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708 Church Street, Evanston, Illinois

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A VACUUM MIRROR

Based on Aerodynamic Principles

V. J. PISCITELLI, B.S., D.D.S., La Salle, Illinois

DIGEST

This article describes an instrument which is exceptionally effective in protecting the surface of the dental mirror under all operating conditions in the oral cavity when used in conjunction with water-cooled ultrahigh speed handpieces.

Basic Principles Involved

The mouth mirror described here utilizes the principles of the venturi to increase the velocity of the air that passes through a nozzle. As the air leaves the nozzle a pressure differential is developed in accordance with the principles developed by Bernoulli. Consequently a vacuum is created around specified areas of the mirror. An example of Bernoulli's principle is demonstrated by the result when air strikes the tilted wing of a plane at a given velocity: Pressure is increased below the wing and decreased above the wing thus providing the lift necessary to fly. Too much tilt in the wing would create a turbulence and render flight impossible.

Use Made of Vacuum—In the mirror the location of the vacuum condition depends in part upon the placement of the nozzle relative to the mirror face. Thus, placing the nozzle close to the edge of the mirror draws air from beneath the mirror, or by conduit from a source at a distance which may eliminate vacuum areas that might otherwise permit some materials to be deposited

on the mirror. The same vacuum which can render the mirror useless is engaged in this project and used to conduct a dry source of air to act as a fan-shaped shield to protect the surface of the mirror.

Although the mirror is not complicated it is made to measurements so exact that one venturi requires a diameter of three thousandths of an inch (.003). Other openings, their shapes, and the spacing are so precise that the least variation will not produce the desired result. Two years of experimentation and research were required to produce only a few satisfactory models.

Evolution in Operative Procedures

In little more than a quarter century changes have taken place which have greatly simplified dental operative procedures. Improvements in cutting tools and handpieces with greater speed were introduced. Today almost universal acceptance of the high speed rotary handpieces prevails.

Advantages of Improved Visibility—With the perfection of devices to afford visibility of the upper teeth equal to that of the lowers ease in operative dentistry will be enormously facilitated. Many advantages will be obtained:

1. Lessened tension for the dentist and patient, more skillful dentistry, and reduced fatigue.
2. Time saved in cavity preparation

may be used to advantage in finishing techniques.

3. Patient resistance to the dental handpiece will be decreased with the adoption of high speed handpieces for procedures in upper as well as lower teeth.

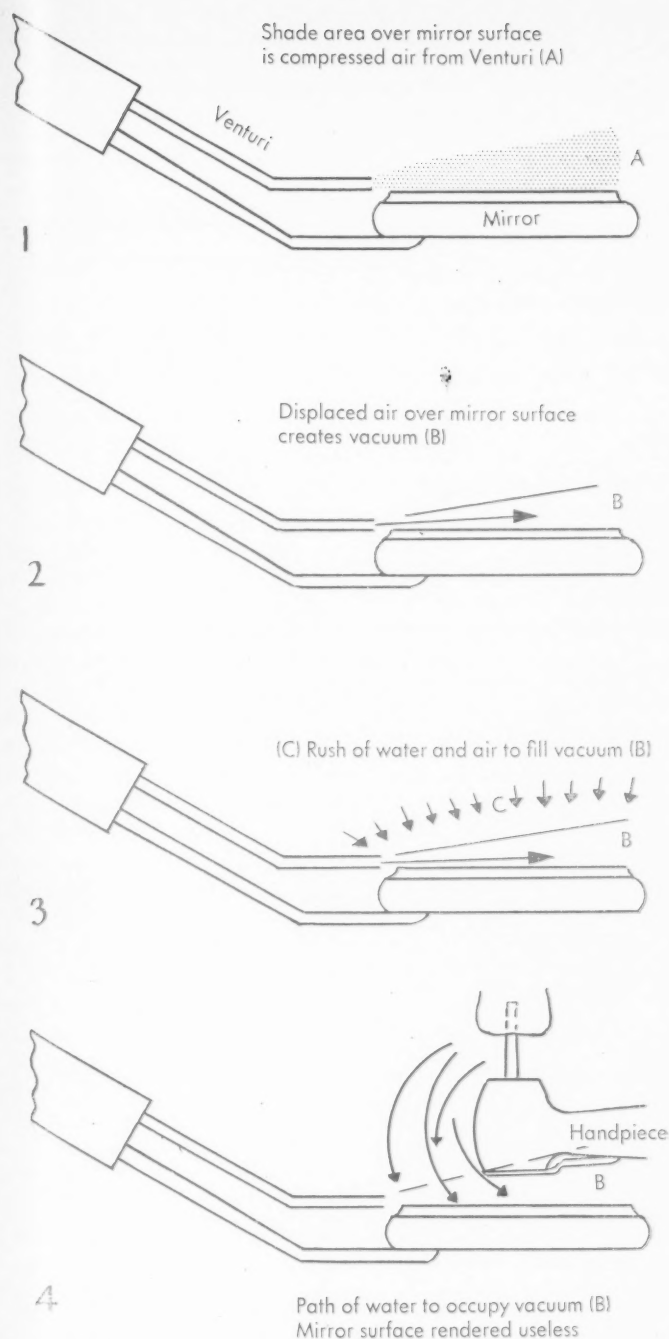
4. Although local anesthesia, and the conventional slow handpieces will not be discarded patients respond favorably to a handpiece so lightly touching the tooth that it would be difficult for the patient to identify the tooth involved.

Acceptance of High Speed Instruments Notable—Patient and dentist acceptance of high speed is phenomenal despite the limitation imposed by poor visibility when working on upper teeth. With high speed and the mirror in general use the problem of mental and muscular fatigue is encountered in treatment of upper teeth. Here the efficiency of high speed drills is inoperative

Means to Obtain Visibility Inadequate—Present methods of obtaining visibility are far from practical or efficient. Smearing the mirror with a water repellant is perhaps psychologically satisfactory but not clinically effective. With a bur or diamond revolving in the neighborhood of 250,000 revolutions per minute and two streams of water under 30 pounds of pressure directed to the bur or diamond within the limited area of the oral cavity, no mirror will remain free of water, oil, and tooth or preparation residue.

The Problem of Visibility

The great speed which makes pos-



1, 2, 3, and 4.

Shows a dental instrument with a nozzle to direct a flow of air over the face of a mirror without utilizing certain aerodynamic principles. Thus air leaving the nozzle and directed over the surface of the mirror creates a vacuum directly over the face of the mirror and conducts any moisture and debris in the area above the mirror to and on the mirror surface, rendering the instrument useless.

sible such conveniences in tooth-cutting poses a problem not present with slow cutting burs. This is the loss of "feel". With slow speed tactile sense

is developed to the point where much caries is removed by "feel". High speed removes this advantage. There is no "feel", no distinction between

soft and hard tissue, so that it is necessary to rely on visibility. Here again a situation not present in slow handpieces is encountered: a wet field. With the conventional drill perfect visibility occurred while cutting tooth structure until debris collected and the preparation was obscured. A simple maneuver with a chip blower was sufficient to eliminate this encumbrance and the preparation could be continued.

Different Problem Encountered—

With high speed the force of the water keeps the cavity remarkably clean but at the same time extremely wet. When viewed with a mirror a wet field does not present as dependable a view as a dry field; this in addition to a wet mirror renders high speed impractical when used on upper teeth.

*Conventional Mirror Useless—*With high speed visibility is more important than before because of a wet field and the loss of the advantage of tactile sensation or feel. The mist and splash of spray interferes with any mirror treated or untreated and renders it useless.

Mirrors rotated by compressed air do not solve the problem and mirrors shielded by a curtain of compressed air and directed over the surface of a mirror only serve to draw more water on the face of the mirror and render it useless.

Development of Satisfactory Mirror

To develop a mirror with adequate visibility, certain principles of aerodynamics were employed. When compressed air is used as an agent to create a vacuum before it reaches the mirror, the differential pressures created around the surface of the mirror render it a useful adjunct to high speed rotary tools and a necessary tool in the dental armamentarium.

*Venturi's Principle Neglected—*In the mirror using compressed air the principles of Venturi and Bernoulli are disregarded and the mirror is ineffective. Venturi's principle demonstrates that compressed air leaving a small opening creates a vacuum. Since this opening is usually situated just beyond the mirror surface, this

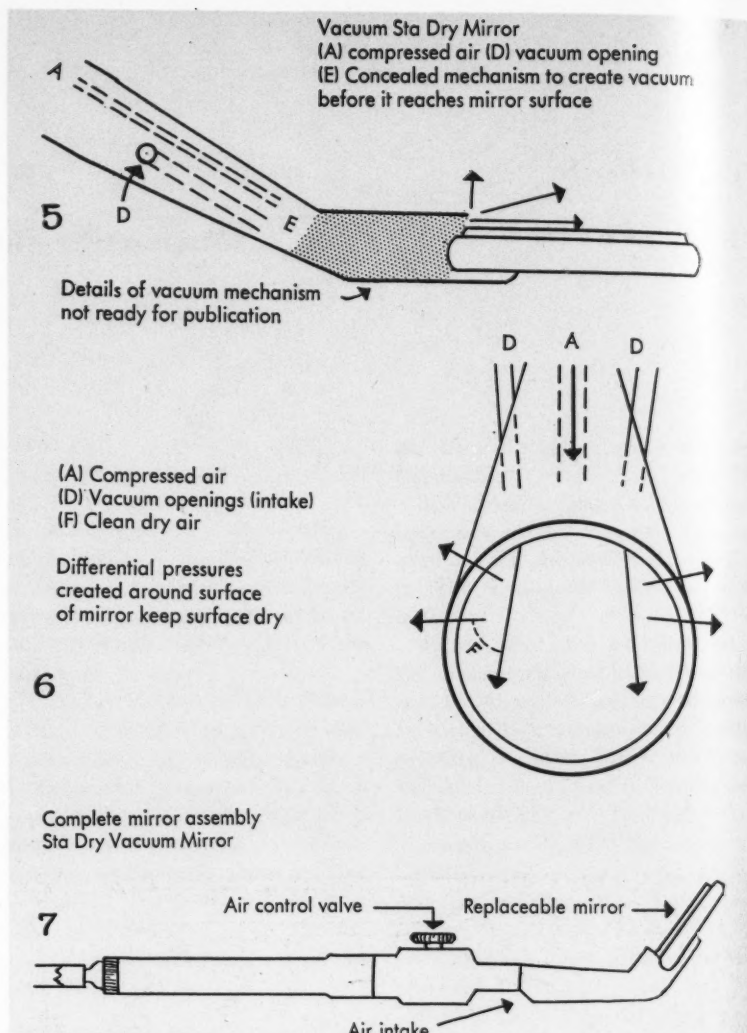
is where the vacuum is created, over the surface of the mirror. Since no vacuum will continue in the presence of air and water, the mirror surface is immediately flooded and rendered useless.

Utilization of Vacuum—By employing the vacuum created according to Venturi's principle as an aid, a mirror has been made which stays dry and effective (Sta-Dry Vacuum Mirror). A simple mechanism is housed in a plenum to which the mirror is attached. The vacuum formed by compressed air leaving a venturi is utilized to obtain a dry mirror and activate other physical principles in a way to maintain a dry surface under the most difficult conditions.

Slight Manipulations Required—In those cases where the length of time required to prepare and complete a procedure is prolonged, the mirror can be manipulated to function well with infrequent wiping. Rapid evaporation occurs by virtue of Bernoulli's principle of increased pressure on the mirror surface. This lays a deposit of dry tooth debris similar to that which occurs with a dry field mirror in large cavity preparations and requires the same procedure. In ordinary average cavities where the new high speed technique is employed, the time necessary for a coronal preparation is so short as to require no manipulation other than air pressure regulation by the index finger.

Mirror is Adaptable—The mirror is replaceable when damaged or no longer clear and can be used in various types of dental procedures. The size of the unit is small and useful for children as well as for adults. The air pressure required is not enough to cause discomfort or cheek flutter.

828 First Street



5, 6, and 7.

Illustrates the use of the principles of the venturi to increase the velocity of the air that passes through the nozzle in order to develop a pressure differential in accordance with the principles developed by Bernoulli. The location of this vacuum condition is dependent in part upon the placement of the nozzle relative to the mirror face. In general the Sta-Dry Mirror affords a shield of air which is effective in providing clear reflecting action during dental operations in a manner not possible with conventional instruments. Placing the nozzle close to the edge of the mirror draws air from beneath the mirror and improves the action at the upper surface of the mirror by eliminating vacuum areas which might otherwise permit some materials to be deposited on the mirror. Conduit or duct is also provided for drawing the air from beneath and behind the mirror in this manner. This dental instrument is effective in protecting the surface of the mirror under all operating conditions.

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Transitional

TEMPORARY IMMEDIATE DENTURES

BRUNO B. KIELICH, JR., D.D.S., Buffalo, New York

DIGEST

An important factor to be considered in denture construction is the possible necessity of rebasing the immediate denture. By using a temporary, or intermediate immediate denture the necessity to rebase can be virtually eliminated. This temporary denture is simple to make and there-

fore sufficiently inexpensive so that the patient can afford to have two dentures made.

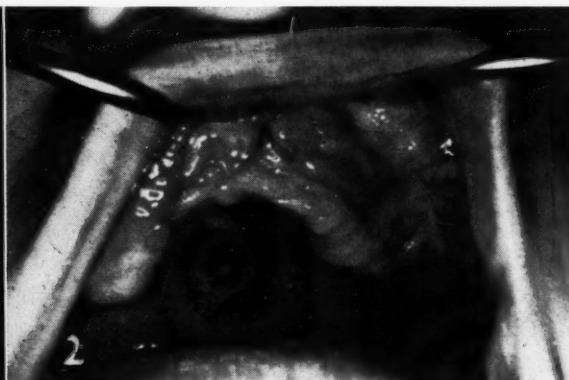
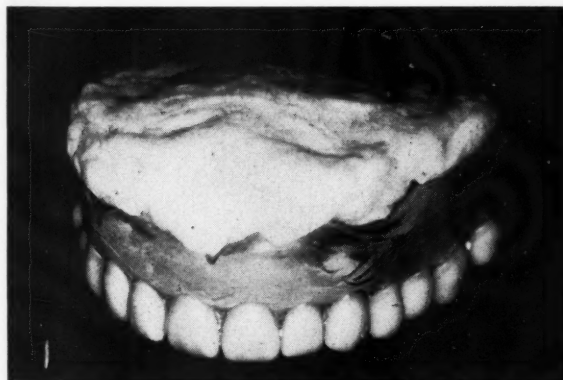
1.
Upper denture rebased with cotton by patient.

2.
Epulis fissuratum from wearing upper denture against lower denture anterior teeth for thirteen years.

Advantages and Disadvantages of Immediate Dentures

The chief advantage of immediate dentures is that the patient is not required to forego teeth even for a few days.

The disadvantages of immediate dentures concern the dentist more than the patient: although many dentures retain excellent fit and function many become loose in a few weeks and require rebasing.



3 and 4.

A spare denture is provided for the patient.

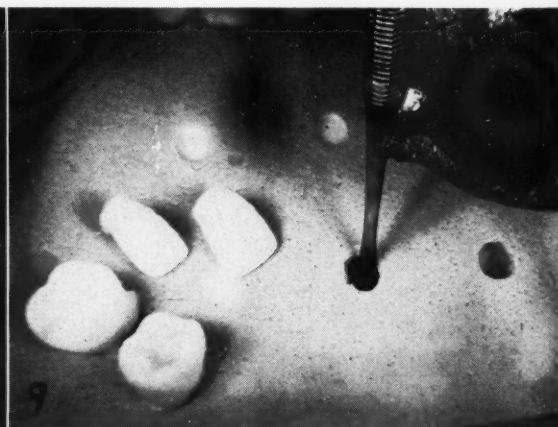
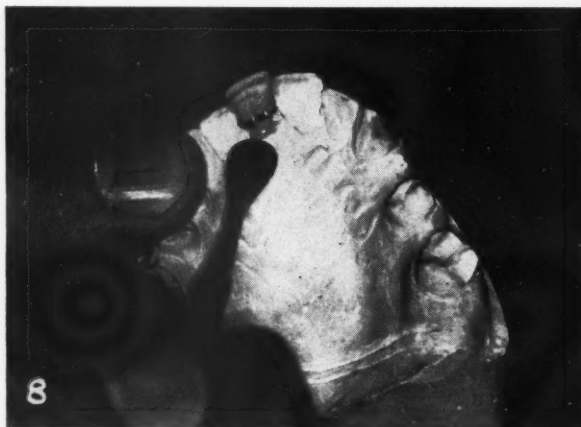


5.
To make a transitional temporary complete denture the first step is to obtain the relationship of the arches to each other by using modeling plastic or baseplates and wax. (Partial dentures can be constructed by modifying this technique.)

6.
Make alginate impressions of each arch before any teeth are extracted.

7.
Pour stone casts from the impressions. Wax-in any carious defects.

8.
Replace all missing teeth using denture teeth.



An Exacting Technique

The proper relining of complete dentures is one of the most exacting procedures encountered in prosthetic dentistry.¹ Patients, however, may consider rebasing a simple procedure. A husband has been known to bring his wife's denture and ask the dentist to rebase it while he waited.

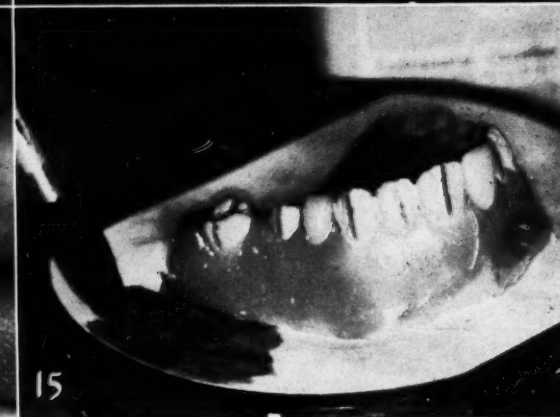
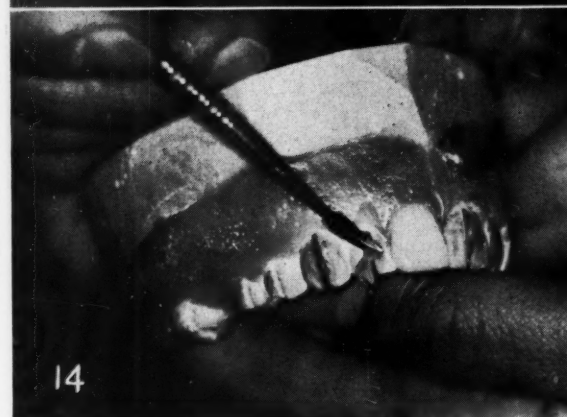
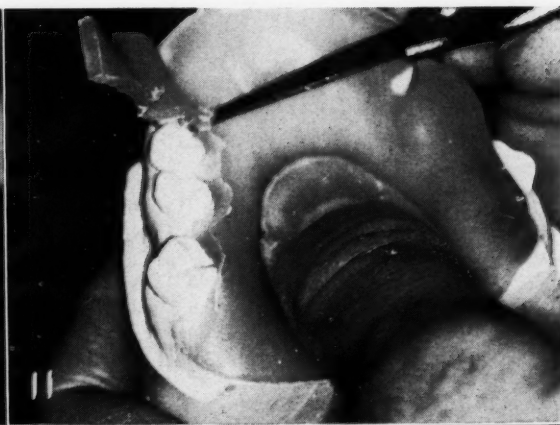
Fee Must be Appropriate—Ignorance of the difficulties involved in re-

basing sometimes leads to dissatisfaction in the patient concerning this procedure. Wishing to keep the initial fee as low as possible, the dentist may fail to include the cost of rebasing and often completes the rebasing procedure at no additional fee.

Payment in Advance—The patient is reluctant to pay a rebasing fee in advance, hoping that in his case the procedure will not be required, or if

9.
Wax teeth can be made from rubber molds (Perfectone Company). Mold guide teeth can also be used since the teeth used do not become an integral part of the denture. They are removed from the flask and duplicated in tooth-colored acrylic.

¹The Academy of Denture Prosthetics, 1959: A Progress Report, J. Pros. Dent. 9:528-538 (July-August) 1959.



10.
Place a layer of wax over the labial and buccal soft tissue portions of the model. The wax should be thin at the gingival junction; thick over the undercut areas.

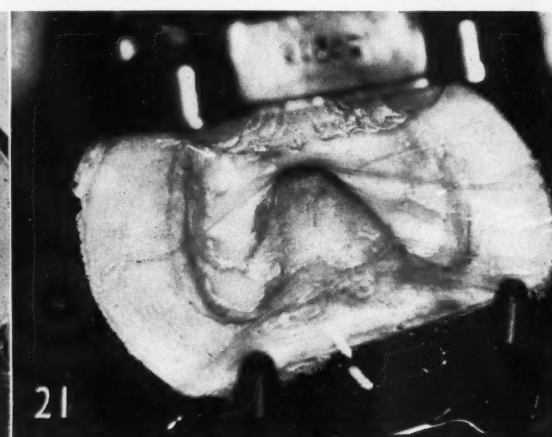
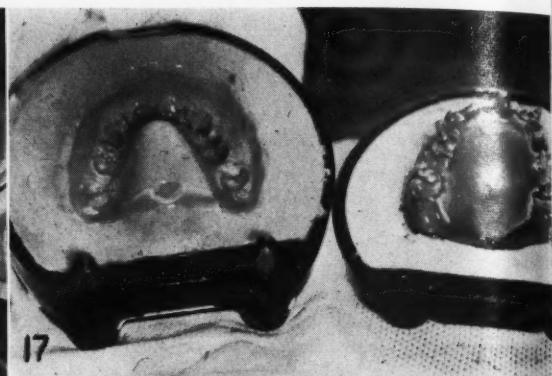
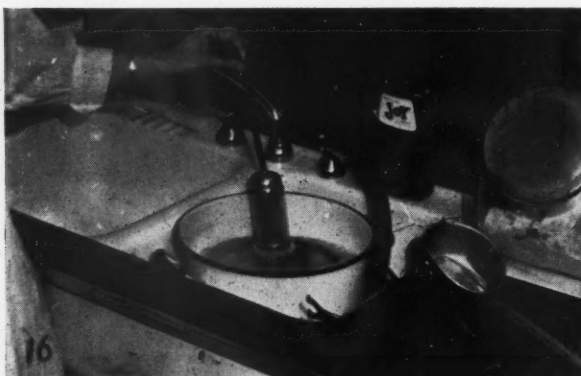
11.
Wax the palate as for a conventional denture.

12.
Stipple the wax with a toothbrush, then lightly flame the stipple.

13.
Cut slits in all stone teeth, anteriors as well as posteriors. The cuts extend from the incisal or occlusal to the gingival. (This step is the key to the entire technique.) The cuts in the teeth make the reproduction of the stone cast possible.

14.
The cuts that have been made are waxed in so that they are obliterated.

15.
The waxed-up cast is flaked in the same manner as a waxed-up denture.



16.
Only facilities for boiling water are needed. An immersion type electric heater can be used.

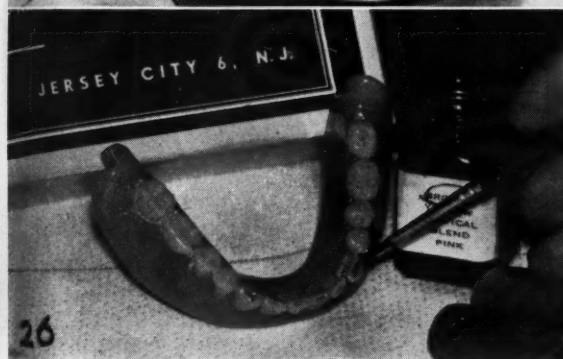
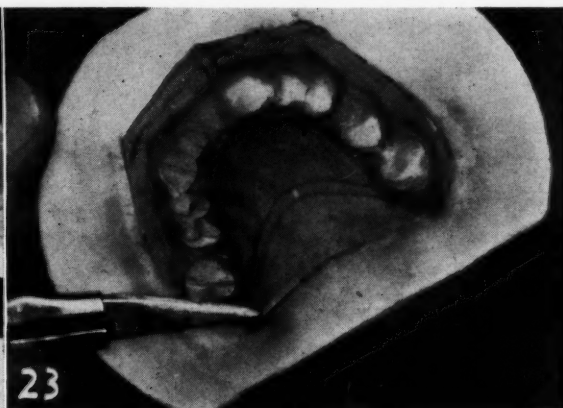
17.
The flask is boiled five minutes, then opened. Some of the stone teeth separate easily. Others fracture at the gingival. The waxed-in cuts permit the removal of the broken segments of teeth. Undercuts would have prevented the removal of these stone teeth if the slits were not made previously. Any teeth remaining in the cast are trimmed off at the gingival but the cast is not trimmed to resemble the ridge at this time.

18.
The softened wax is removed and the flaked models washed out with boiling water to which liquid detergent has been added.

19.
While still hot the entire negative cast is coated with an alginate separating medium (Modern Foil, Alcoat).

20.
When the flask cools the tooth portion is filled to the gingival with tooth-colored self-curing acrylic mixed to thin consistency. Only one shade is used and that a light one as the teeth will be tinted later.

21.
A sheet of cellophane is placed over the tooth-colored acrylic and a test pack made. Since the cast is not yet contoured but has the teeth trimmed to the gingival outline, it will delineate the gingival contour sharply. Surplus acrylic is trimmed at the gingival.



22.

The cast must now be trimmed to approximate the ridge after extraction. This carving creates space for the pink denture material. Only a small amount of the cast is trimmed away.

23.

When the self-curing tooth-colored acrylic has begun to harden, the pink acrylic is added. To obtain adequate working time, an acrylic is used which will not harden until placed in boiling water for one minute (Fast-Set, Acri-Lux Dental Mfg. Co.).

24.

The cast is flooded with alginate separating fluid. No cellophane is used. The flask is closed and pressed.

25.

After the acrylic cures, the denture is deflasked. Since autopolymerizing material was used the investing stone does not adhere to the plastic.

26.

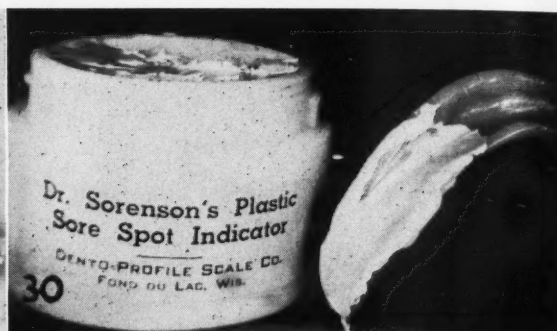
The gingival portion of the teeth can be darkened in shade by painting with a transparent acrylic stain (Minute-Stain, George Taub Products). This is easier to use and blends better, than using two shades of acrylic when making the teeth.

27.

Apparent separation of the teeth is achieved by opaque stain to darken the interproximal areas (Rudolfo P. Walther Co.). The pink gingival portion can also be tinted if some of the tooth-colored acrylic should have extended over the gum-covered acrylic. Polishing can be minimized by applying acrylic lacquer over the whole denture.

28.

There is no particular sequence of extraction. The number and location of the teeth to be extracted at any time is determined by the health of the patient and by mutual agreement between the patient and the dentist. Usually all remaining teeth of one arch are removed at one sitting. Teeth can be removed, however, from both arches and upper and lower dentures inserted at the same appointment.



29.

An anesthetic adhesive ointment is used for the patient's comfort. Transitional immediate complete dentures for the lower jaw present no special problems. The same procedure is followed as for the upper.

30.

Fitting the denture at initial insertion or subsequent appointments is accomplished with the aid of pressure-indicating paste.

31.

If necessary the denture is ground to fit. No attempt is made to make the ridge fit the denture although necessary surgery, such as the removal of undesirable undercuts should, of course, be done. The patient is instructed to wear the denture at night during the first week, after which the denture is removed at night.

32.

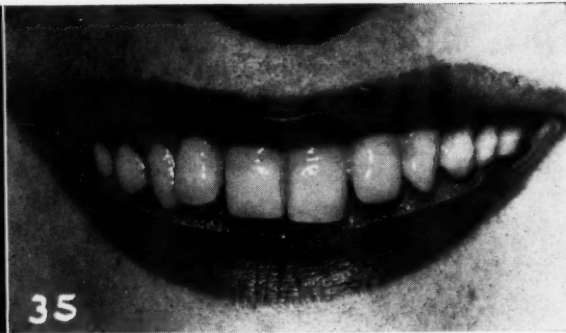
When the patient complains of looseness, rebasing is done with temporary expedients such as in-the-mouth self-curing acrylic or a clear relining plastic from a tube. (Cushion, George Otis Co.).

it is necessary, not for a long time. Although warned in advance of the probability, the patient is usually surprised and disappointed at how quickly his immediate dentures lose their perfect fit.



33.

This patient is losing her teeth from periodontoclasia.



34.
The temporary denture. It is unlikely that a patient would retain the temporary denture in lieu of having second dentures made because: (1) Arrangements for both temporary and subsequent dentures are made before any treatment is begun. (2) The teeth of the temporary denture, being made from thinly mixed autopolymerizing acrylic, will darken in a few months. (3) The denture may break if worn over a year.

35.
The same denture shown in the mouth.

36.
Patient with natural teeth.

37.
Wearing transitional dentures.

38.
Before.

39.
After.

Problems in Rebased Procedure

Rebasing is a difficult procedure for the following reasons:

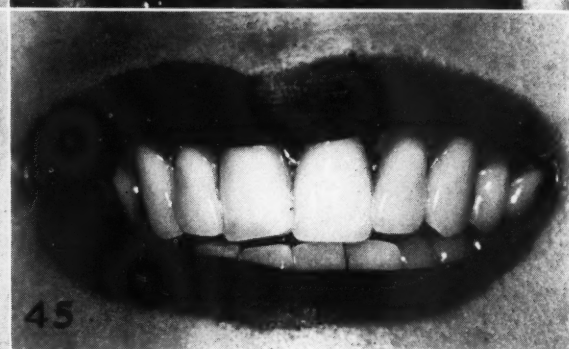
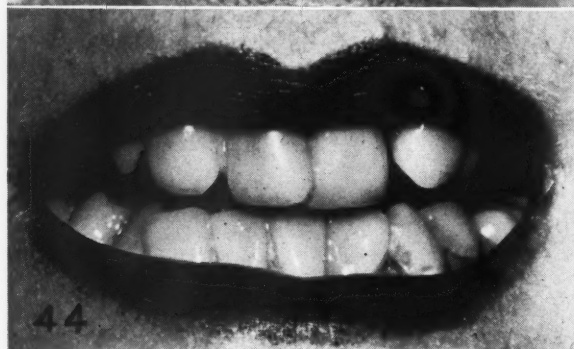
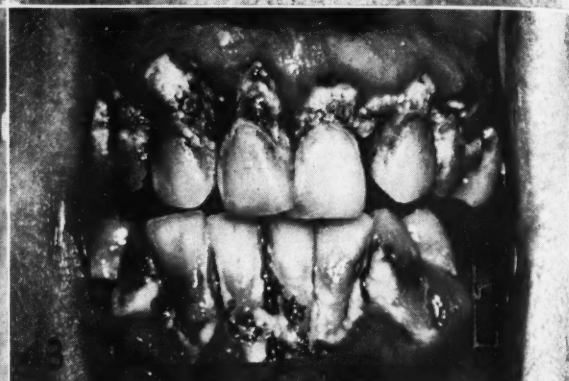
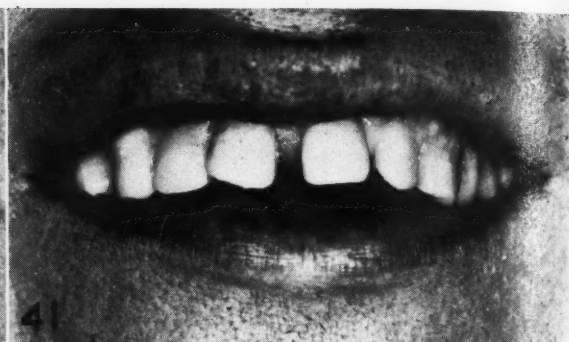
(1) Unless properly done thickening of the denture base will result. The technician grinds the palatal portion to conventional thickness, but the added bulk increases vertical dimension, sometimes more than a desirable amount.

(2) The patient may place his mandible in a protrusive position during the making of the impression. When the rebased denture is inserted, the patient closes in centric position with only the posterior teeth in contact.

(3) Proper rebasing requires that the patient be deprived of his teeth for a day or two. This nullifies the chief reason for making an immediate den-

ture restoration in the first place.

(4) Self-curing, in-the-mouth rebasing material is unsatisfactory. Results of the laboratory and clinical tests of the direct, hard, self-curing reliners and consideration of their comparative advantages and disadvantages indicate that the direct reliners are not adequate for long-term clinical service. The more permanent denture rebasing technique should be encour-



40.
A "before" picture of a patient in public life who could not be without teeth.

41.
Temporary dentures made the transition to the patient's second dentures inconspicuous.

42.
The superior appearance, fit, and function of the second denture causes the patient to discard the temporary denture except to use it in an emergency.

43.
A septic condition, as shown, was tolerated by the patient because of the fear of being without teeth. When infection is present, antibiotic supportive measures should be used and the patient should remove the denture at night.

44.
Temporary dentures helped control resorption and ridge contour.

45.
These dentures were made six months after extraction. They have been worn over two years without need for rebasing.

aged and the direct, self-curing hard relining resins should be considered as temporary expedients.²

(5) Theoretically, denture patients

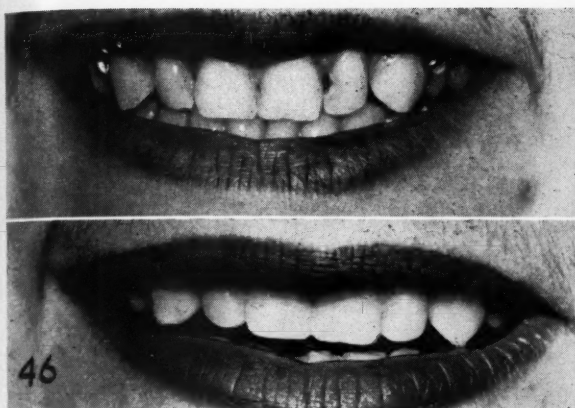
²Brauer, G. M.; White, E. E.; Burns, C. L.; and Woelfel, J. B.: Denture Reliners: Direct, Hard, Self-Curing Resin, JADA 59:270-283 (August) 1959.

should be recalled for any adjustments, refitting, and remaking that may be necessary. In clinical practice few patients respond to recalls (Figs. 1 and 2).

Rebasing Seldom Needed

The use of a transitional temporary immediate denture which is easier to make and therefore less expensive is advocated so that the patient can afford to agree to two sets of dentures before treatment is begun.

Slight Difference in Cost—The use



46.
Upper view shows natural teeth, lower the transitional denture.



47.
Transitional denture in upper view, subsequent denture in lower view.

of a transitional denture almost always eliminates the need for a rebase of the subsequent denture, making the difference in cost slight. For this small difference in cost the patient is provided with an extra denture which is an exact copy of his own teeth (Fig. 3 and 4).

Improvement in Ridge Formation
—DeVan³ has shown that the wearing

of an immediate denture facilitates the formation of a desirable ridge. Four to six months is sufficient time to wear the transitional dentures before constructing the second dentures.

Payment of Fee—Arrangements can be made for the patient to make payments on his overall fee while he is wearing his transitional dentures.

Conclusion

Transitional immediate dentures

have the following advantages:

- (1) They are easy to make.
- (2) They are low in cost.
- (3) Attractive in appearance.
- (4) Require less bone removal.
- (5) They serve as spare dentures.
- (6) They minimize the financial problem by enabling the patient to pay on his total account while wearing the dentures.

4000 Main Street

³DeVan, M. M.: Postgraduate Course, University of Pennsylvania (February) 1957.

An Invitation to Contributors:

Since 1894 when DENTAL DIGEST was founded the pages of this journal have been open to articles contributed by dentists throughout the world. The emphasis has been, and will continue to be, on the publication of articles on all phases of clinical practice.

DENTAL DIGEST encourages the use of many illustrations to show techniques. We prefer that the text be short and that step-by-step tech-

nical procedures be presented as an illustrated "clinic on paper."

A booklet, *Suggestions to Authors*, has been prepared by the editorial staff and will be sent free on request.

Why publish? Any dentist who has developed a technique, refined a procedure, or has made a significant clinical observation has the opportunity to record these advancements and elevate his profes-

sional standing by making a contribution to the literature.

* * *

For all illustrated articles that appear in DENTAL DIGEST the author will receive an honorarium of \$50 to help defray his expense in preparing the photography or drawings.

Contributors are invited to send their articles to:

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Evanston, Illinois

Clinical Applications

of OCCLUSION and ARTICULATION—

Part Six

LEO STOLL, D.D.S., Woodmere, Long Island, New York

DIGEST

This is the sixth in a series of articles devoted to occlusion and articulation. In this installment the step-by-step procedures for making correct occlusal adjustments are illustrated.

Procedures Concerning The Articulator Key

The articulator record, or key, is used as a mechanical substitute for the wax bite record and is used primarily for maintaining and reproducing the occluded maxillomandibular relation of the casts or appliances on the articulator, as originally determined by the bite record for which the key was made. This gives the articulator the necessary "memory" to recover a desired relation of the casts or appliances mounted on the articulator.

Relationship Stabilized—In addition, the key serves the extremely important function of stabilizing the relationship, as it is releasably secured by the universal joint clamp of the articulator. This eliminates the possibility of accidentally distorting the relationship.

Exchange of Keys Visualized—These important features of the keys can best be shown by the procedures used to exchange two different keys which are visualized in Figures 110 to 117.

Procedures for Indicating The Required Occlusal Adjustments

An accurate and sensitive means for marking and indicating the in-

terfering contacts of the opposing teeth when adjusting the occlusion of the teeth is required.

Articulating paper, commonly used for this purpose, has been found totally inadequate except for indicating the gross interferences. A specially prepared cream, which is made in various contrasting colors, is preferred for marking the locations of the finer interferences. Steps in the method are shown in Figures 118 to 125.

The Occlusal Adjustments

The detailed description of the successive steps in making the occlusal adjustments of the teeth would be too extensive to present here. In brief, however, the following general details can be mentioned.

1. The occlusal contacts of the opposing teeth are first balanced to be in harmony with the centric relation. The eccentric relation adjustments can then be made in any order desired.

2. A general rule to be observed is that the occlusal contacts of the opposing teeth which oppose each other in the adjusted centric relation must not be disturbed.

3. For the eccentric relation adjustments of the occlusion, the BULL rule is usually adhered to, that is, the *buccal cusps* of the upper teeth and the *lingual cusps* of the lower teeth are ground. More specific rules for grinding in the occlusion have been described in dental literature.

Technique for Grinding Interfering Eccentric Occlusion Contacts—

As mentioned previously, the eccentric relations are resultants of mandibular movements of a limited magnitude and, for practical purposes, may be considered to be short straight line movements of the mandible to or from its centric relation.

New Plane Created on Cusp—It is therefore desirable when grinding an eccentric occlusal interference to grind the indicated interfering contact with short sweeping movements rather than only grinding the indi-

110.

A key which is to be removed is in place on the articulator. The universal joint clamp is shown being released. The key which is to be placed back on the articulator is shown beside the articulator.

111.

The upper cast holder has been released for movement and is shown being lifted away from the key.

112.

The key on the articulator is removed and then set aside.

113.

The desired key is being placed on the articulator. The previously removed key is seen to the left of the articulator.

114.

The desired key is in place on the articulator.

115.

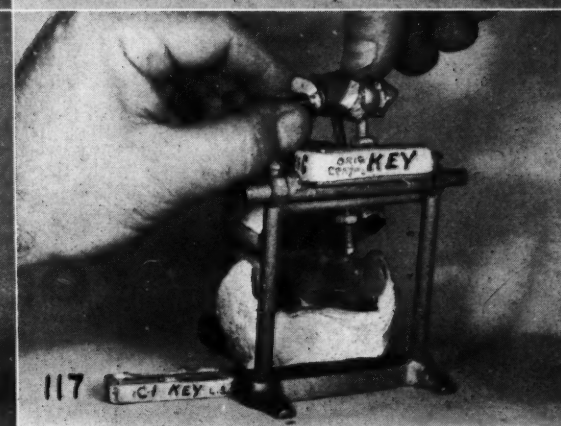
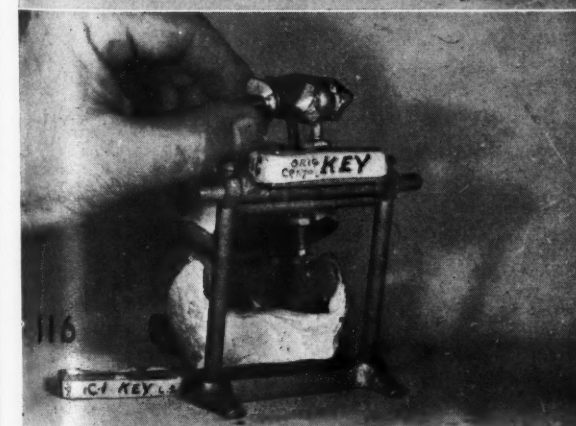
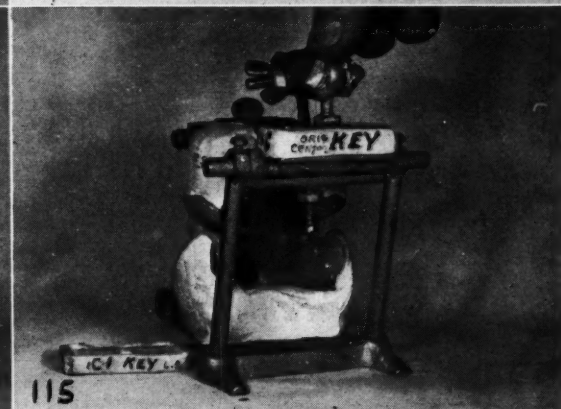
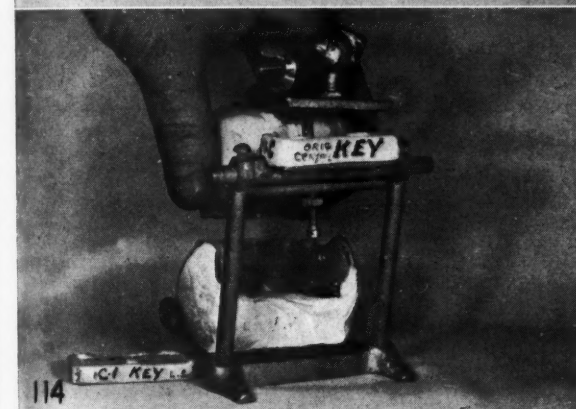
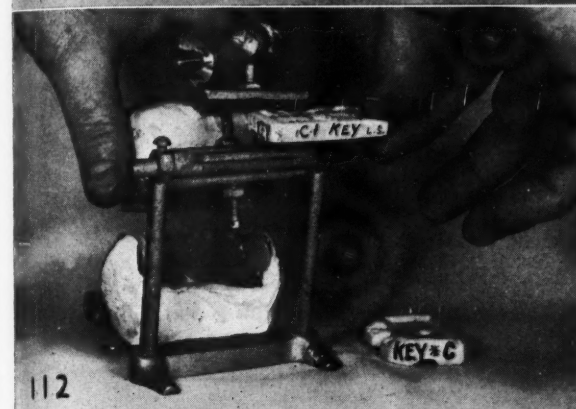
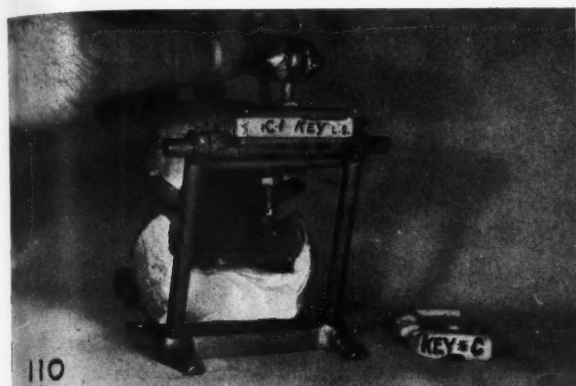
The upper cast holder is properly seated into the key by hand.

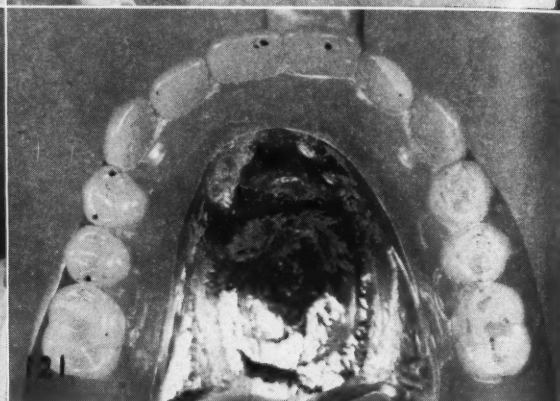
116.

The universal joint clamp is locked to secure the relation determined by the key.

117.

The combined operation of seating and releasably securing the relation, as it is carried out in practice. The occluded maxillomandibular relation of the casts or appliances on the articulator, as originally determined by the bite record for which the key was made, is now recovered and releasably secured.





118.
Articulating paper is used to mark and indicate gross occlusal interferences.

119.
The method is shown for applying the marking cream to the occlusal surfaces of the teeth with a short stiff brush.

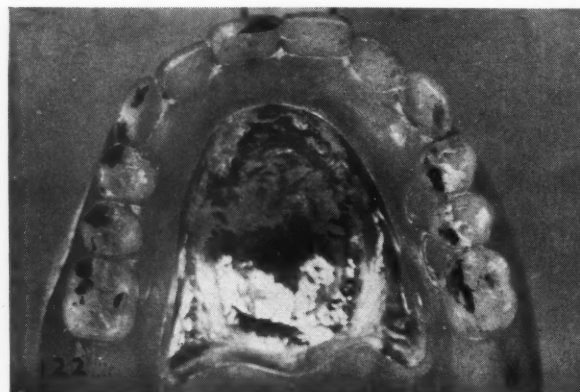
120.
The occlusal surfaces of the teeth of a lower denture with the marking cream applied. In practice, the teeth of either denture can be so marked depending on the requirements.

121.
The initial contacts of the opposing teeth indicated by the markings on the upper denture. Note the precise markings.

cated contact point itself. This reduces the existing inclined plane of the cusp of the teeth and creates a new appropriate inclined plane on the cusp.

122 and 123.
The progressive increase in the occlusal contacts of the teeth as the occlusal adjustments are made, as indicated by the increased markings on the teeth.

Occlusion in Harmony with Masticatory Mechanism— After the occlusion of the teeth is balanced to be in harmony with the centric relation and the functional essential eccentric





occluded relations on the articulator, it is considered to be balanced and in harmony with the articulations of the jaws of the patient. Stated differently, the occlusion of the teeth has

124 and 125.

Marking creams of contrasting colors on the upper and lower dentures. Note the simultaneous transfer of markings on each of the dentures. This procedure is sometimes desirable when it is necessary to make the occlusal adjustments simultaneously on both dentures. Due to the light color of the cream on the upper denture it is not entirely visible in the photograph.

been balanced to be in harmony with the masticatory mechanism of the patient.

(End of Part Six)

246 Woodmere Boulevard

ANNOUNCEMENT OF BOOKS RECEIVED

- FLUORIDATION—ERRORS AND OMISSIONS IN EXPERIMENTAL TRIALS, By Phillip Sutton, Melbourne University Press; New York, Cambridge University Press, 1960. Price \$1.75.
- SURGERY FOR DENTAL STUDENTS, By R. P. Jepson, F.R.C.S., and B. N. Catchpole, F.R.C.S., Springfield, Illinois, Charles C Thomas • Publisher, 1959. Price \$5.00.
- ESSENTIALS OF REMOVABLE PARTIAL DENTURE PROSTHESIS, By Oliver C. Applegate, D.D.S., D.D.Sc., ed 2, Philadelphia, W. B. Saunders Company, 1959.
- DISORDERS OF THE TEMPOROMANDIBULAR JOINT, By Laszlo Schwartz, Philadelphia, W. B. Saunders Company, 1959. Price \$15.00.
- RATIONALIZED ROOT CANAL TREATMENT, By Ang. G. Sargenti, Dr. Med. Dent. (Switzerland), and Samuel L. Richter, Dr. Med. Dent. (Switzerland), New York, AGSA Scientific Publications, 1959.
- THE BIOLOGICAL, SOCIOLOGICAL, AND PSYCHOLOGICAL ASPECTS OF AGING, By Kurt Wolff, M.D., Springfield, Illinois, Charles C Thomas • Publisher, 1959. Price \$3.75.
- THAT THE PATIENT MAY KNOW, AN ATLAS FOR USE BY THE PHYSICIAN IN EXPLAINING TO THE PATIENT, By Harry F. Dowling, M.D., Sc.D., and Tom Jones, B.F.A., Philadelphia, W. B. Saunders Company, 1959. Price \$7.50.
- ORAL ANATOMY, By Harry Sicher, M.D., D.Sc., ed. 3, St. Louis, C. V. Mosby Company, 1960. Price \$13.50.
- NUTRITION IN CLINICAL DENTISTRY, By Abraham E. Nizel, D.M.D., M.S.D., Philadelphia, W. B. Saunders Company, 1960. Price \$10.00.
- ENDODONTIC PRACTICE, By Louis I. Grossman, D.D.S., Dr. Med. Dent., ed. 5, Philadelphia, Lea & Febiger, 1960. Price \$7.50.
- INTERNAL MEDICINE IN DENTAL PRACTICE, By Leon H. Collins, Jr., A.B., M.D., and Martin P. Crane, B.S., M.D., Sc.D. (Hon.), ed. 5, Philadelphia, Lea & Febiger, 1960. Price \$8.50.
- THE DENTIST IN ART, By J. J. Pindborg, and L. Marwitz, Chicago Quadrangle Books, 1960. Price \$12.50.
- XYLOCAINE, THE PHARMACOLOGIC BASIS OF ITS CLINICAL USE, By Sten Wiedling, Stockholm, Almqvist & Wiksell, 1959.
- ORAL PATHOLOGY, AN INTRODUCTION TO GENERAL PATHOLOGY FOR HYGIENISTS, By Donald A. Kerr, B.S., D.D.S., M.S., and Major M. Ash, Jr., B.S., D.D.S., M.S., Philadelphia, Lea & Febiger, 1960. Price \$6.00.
- GENERAL ANESTHESIA IN DENTAL PRACTICE, By Leonard M. Monheim, B.S., M.S., D.D.S., St. Louis, The C. V. Mosby Company, 1960. Price \$10.50.

The Use of RUBBER IMPRESSION MATERIAL

for Restoration of Single Teeth*

JULIUS MICHMANN, D.M.D., and S. PERLMUTTER, D.M.D., Jerusalem, Israel

DIGEST

This article presents a step-by-step impression technique for cast base restoration of single teeth, using a rubber material (Thiocol®) in a well-adapted copper band and a metal pin with modeling compound for reinforcement. The results fulfill the most exacting requirements.

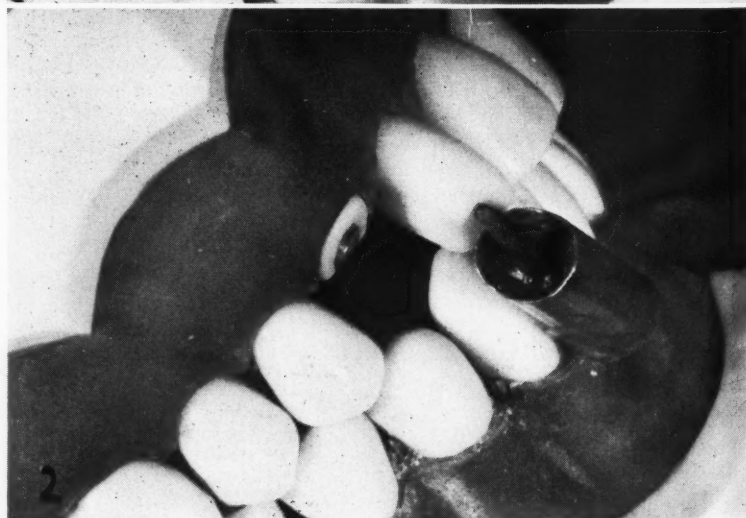
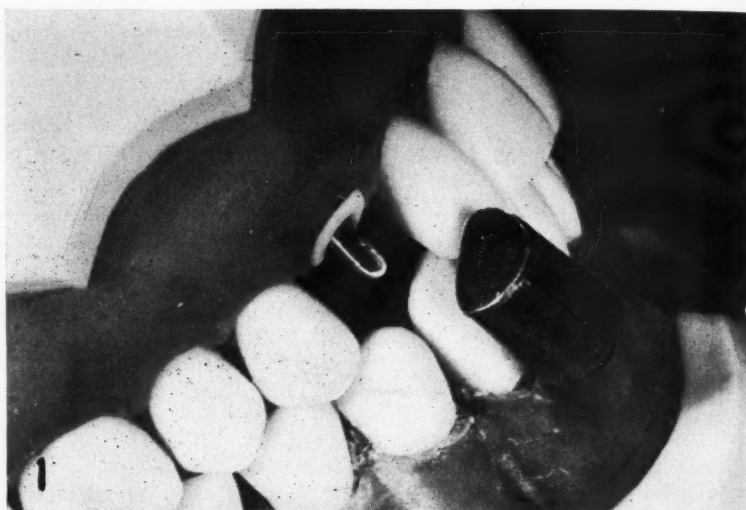
Technique

The procedure for cast base preparations includes the following steps:

1. A seamless, non-annealed copper band (about 1.5 millimeters wider than the circumference of the prepared root) is accurately trimmed, festooned, and adapted to the prepared root surface by inward bending of the cervical margins. This confines the impression material in the band, gives a sharp impression, and helps to avoid any impingement of soft tissue during the taking of the impression. The edges of the band are smoothed with fine discs.

2. To carry the elastic impression material into the prepared canal and for reinforcement of the final impression, a conically-shaped stainless steel wire about 0.8 to 1.2 millimeters thick with a retentive loop at its coronal end is adapted to the canal (Fig. 1). The canal should be a little wider than the wire.

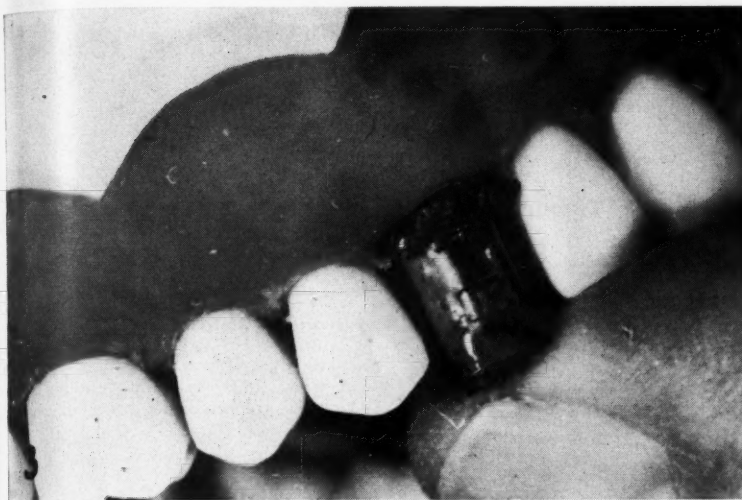
3. With the loose pin in position the modeling compound-filled copper band is pressed on over the preparation and air cooled.



1. Shows the stainless steel pin with retention loop inside the canal and copper band with compound.

2. Copper band with space of equal thickness for the rubber impression material.

*From Prosthetic Department, School of Dentistry, Hebrew University-Hadassah Medical School, Jerusalem, Israel.



3. Rubber impression pressed against the preparation for about 6 seconds.

4. Final impression.



4. After removal of the impression, in which the metal pin must be well retained, a layer of about 1.5 millimeters in thickness is scraped from the impression surface all around, creating enough space for an equal thickness of the rubber impression material (Fig. 2).

5. To ensure adherence to all the surfaces of this individual copper band two or three layers of rubber cement are painted on the pin, as well as on the compound impression surface, and slightly warmed over a Bunsen burner to accelerate the hardening of the rubber cement, which takes 2 to 3 minutes.

6. After this interval the copper band is covered with a well mixed rubber impression material (Thiocol) using a small metal spatula and carefully avoiding air bubbles. To enable easy removal of the final impression it is only necessary to insulate the canal with an extremely thin layer of liquid paraffin.

7. It is important to wait about one minute before placing the loaded copper band on to the preparation to

obtain the plasticity necessary for an exact impression.

8. From the moment the impression band is well over the prepared root a slight but steady pressure is applied for a minimum of about six seconds (Fig. 3). After testing with the fingernail the excess impression material exuded from the ring for final hardness, the impression is removed parallel to the preparation with a light jerk.

9. When tested for accuracy, washed in running water and air dried, the impression is ready for die-making according to accepted laboratory procedures (Fig. 4).

Conclusions

In clinical practice it was found that not all Thiocol materials always show the same properties, and the

operator is advised to become well acquainted with the handling of the material of his choice.

Manipulation time and polymerization rate are highly influenced by the relative humidity of the atmosphere.

When removed from the prepared root the rubber impression shows both elastic and plastic properties. The higher the elasticity the harder the material and the better the fit of the final casting.

In the event of any imperfections, it is best to retake the whole impression, which is easily done. Although these impressions are rather volumestable, it is preferable to continue with the preparation of the dies (silver-copper-plated or stone) not later than about 11 hours after the impression is taken.

With exact preparation of the root and careful handling of the rubber impression material provided, this technique is highly accurate, simple, and inexpensive.

Hebrew University, Hadassah Medical School

Facial Sinuses of Dental Origin

SINUSES of dental origin may be of long duration. A sinus may be the result of either acute or chronic infection, caused in turn by death of the dental pulp.

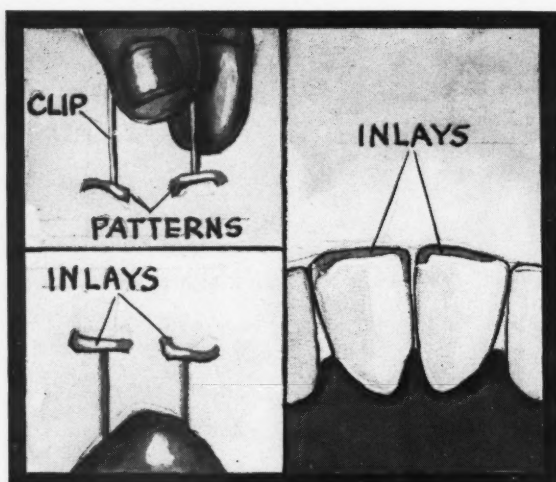
Discharging facial or cervical sinuses of dental origin must be differ-

entiated from carbuncles, boils, infected cysts, actinomycosis, tuberculosis, foreign bodies, and developmental sinuses. Roentgenograms are essential and repeated examination from different angles may be necessary.

The sinus tract may be cared for by excision or curettage. Removal of the tooth, teeth, or roots that are the infective agents is essential if recurrence is to be avoided.

From *British Journal of Surgery*, 46:433, 1959 in *International Abstracts, Surgery, Gynecology, and Obstetrics* 109:538 (Dec.) 1959.

1



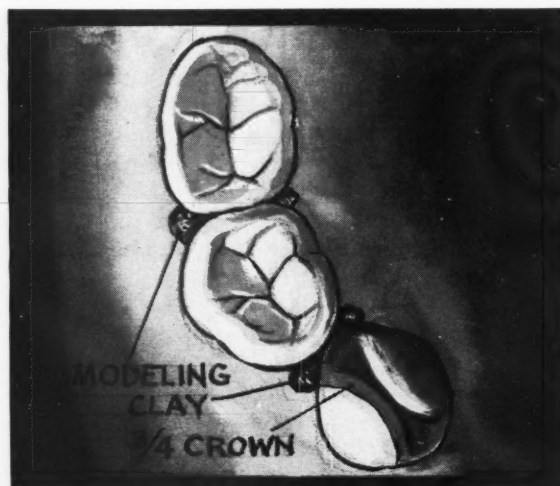
Clinical and Laboratory

Sprues for Inlays

D. W. Easthope, B.D.S., Newcastle, Australia

1. Inlays for the incisal edges of lower anterior teeth may be made two at a time. A paper clip is used for a sprue for the two patterns. The inlays are cemented before the sprues are removed.

2

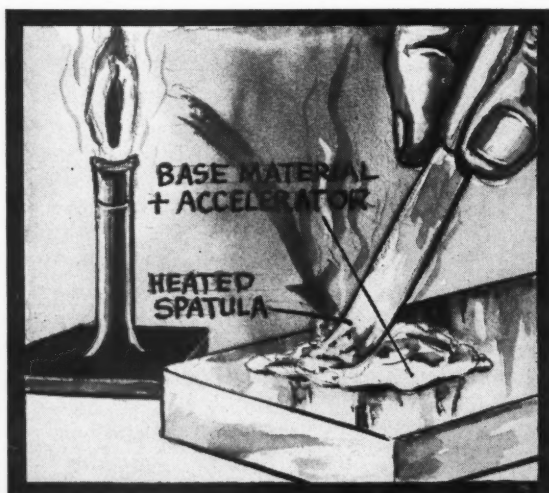


Plaster Impression for Fixed Bridge

David Cohen, D.D.S., Washington, D.C.

2. To facilitate removal of a plaster impression place modeling clay in the embrasures of the adjacent teeth, both on the buccal and lingual.

3



Ease of Spatulation of Impression Materials

O. B. Ferguson, Jr., D.D.S., Pontiac, Michigan

3. When using an impression material that consists of an accelerator and base materials, heat the metal spatula slightly before starting the mix. This will produce a smoother and more rapid mix.

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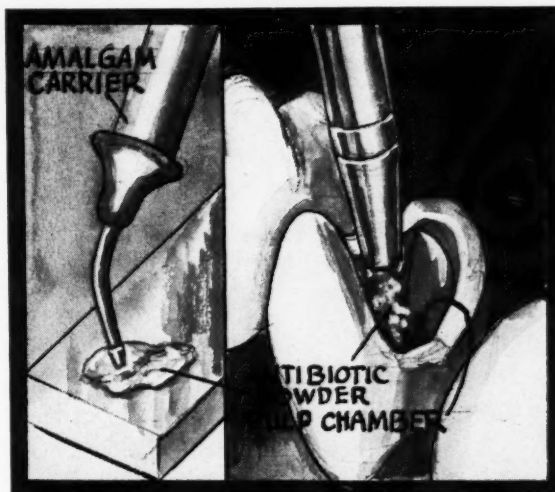
You do not have to write an article. Furnish us with rough drawings or sketches, from which we will make suitable illustrations; write a brief description of the

to SUGGESTIONS . . .

Pulp Therapy

Lawrence Goodman, D.D.S., South Ozone Park, New York

4. Use an amalgam carrier to place antibiotic powder or calcium hydroxide on a pulp exposure or into the pulp chamber.

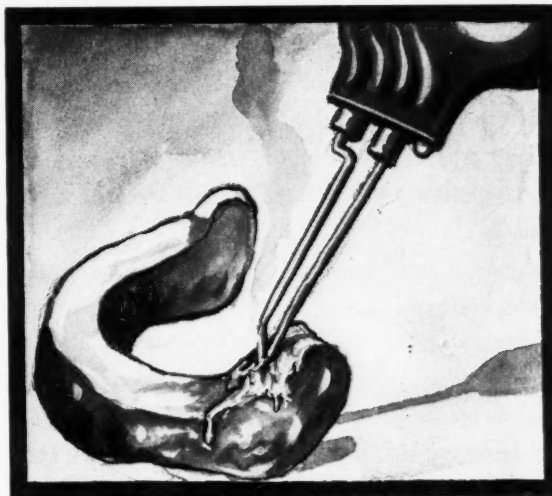


4

Wax Pooling

Joseph T. Martuch, D.D.S., Cleveland, Ohio

5. A trigger-operated soldering iron is an effective laboratory tool to use to soften wax on a bite-rim.

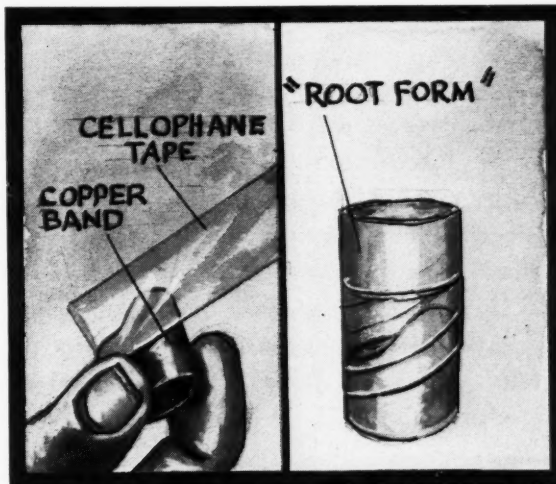


5

Forming a Die

Paul Friedman, Med. Dent., Geneva, Switzerland

6. A strip of cellophane tape one-quarter inch wide and three-quarters inch long placed obliquely against the copper band and rolled to form a cylinder makes a satisfactory form for the root portion of a die.



6

technique involved; and jot down the advantages of the technique. This shouldn't take ten minutes of your time. Turn to page 288 for a convenient form to use.

Send your ideas to Clinical and Laboratory Suggestions Editor, DENTAL DIGEST, 708 Church Street, Evanston, Illinois.

The EDITOR'S Page

It is the fortunate dentist who has learned in his days in dental college that the behavior of the woman in the dental chair may be related to her menstrual cycle. Most of us are aware that the menopause may be the cause of unusual behavior and reaction to the dental experience. Few dentists, however, have been told of the syndrome of premenstrual tension that is common among women in the child-bearing ages. Dentists are not alone in their ignorance: most physicians are indifferent to the situation and husbands in general are woefully devoid in understanding of the subject.

Premenstrual tension is somehow related to hormonal imbalance and the retention of fluid, which, in turn, is probably associated with the intake of sodium chloride. Whatever the mechanism, the condition may be of real distress to the woman-sufferer who is not in the most ideal condition as a dental patient—or in many other interpersonal relations.

Appleby has described the condition and the management:¹

"Premenstrual tension is the term commonly applied to a syndrome occurring in a proportion of women in the days immediately preceding the menstrual cycle. The symptoms are partly psychological, such as irritability and depression, and partly somatic, such as swelling of the breasts and abdomen. Headache, a symptom which defies classification into either group, is also present in most cases.

"The incidence of premenstrual tension varies a great deal between different series, as Pennington states that it occurs to some degree in 95 per cent of women in the child-bearing years, while Bickers and Woods report an incidence of only 36 per cent in a population of female factory workers. Differences in criteria for making the diagnosis undoubtedly play a part in these variations, but the type of patient being studied also contributes to the variation, as it has been pointed out that the incidence

in a prison population was 33 per cent while among student nurses 73 per cent were sufferers. In my own practice approximately 55 per cent of the female patients between the menarche and the menopause have some degree of premenstrual tension, and in about 29 per cent of these it is severe enough to require treatment . . .

"Premenstrual tension is a relatively common condition which, in common with the other similar syndromes of dysmenorrhea and 'menopausal misery,' causes a great deal of distress and suffering in the patients and yet has received scant attention by the medical profession as a whole. There are probably three main reasons for this: the first is that all are benign subjective conditions, so that no obvious harm will come to the patients even if untreated; the second is that women have come to accept these symptoms as inevitable ills; and the third is that the majority of the profession are male and, never having suffered personally from these complaints do not really take them seriously . . .

"Earlier studies on the etiology and treatment of premenstrual tension are reviewed, and study of 30 consecutive patients in general practice is reported. All of these patients received treatment with chlorothiazide, meprobamate, ethisterone, dimethisterone, and a placebo. Over half of the patients obtained complete relief or marked improvement with meprobamate, one-third with chlorothiazide, and one-fifth with progesterone derivatives."

It is outside the scope of dental practice for the dentist to suggest what the patient should do to relieve her premenstrual tension. Treatment is entirely a matter for the physician. The dental assistant is in a favorable position to question women regarding their menstrual cycle and to make appointments at favorable times. In those cases where the patient is required to undergo dental treatment immediately preceding menstruation the dentist may wish to use some preoperative sedation, notably meprobamate. The prescription of a diuretic or a hormone would not be advisable on the part of the dentist.

¹Appleby, B. P.: A Study of Premenstrual Tension in General Practice, British M. J. 5170:391 (Feb. 6) 1960.



Rheumatoid Arthritis

About 5 per cent of all cases of rheumatoid arthritis begin before the age of 15 years. The onset is usually during the second and third years of life. Twice as many girls as boys are affected. Respiratory infection or joint trauma precedes the onset of rheumatoid arthritis in only one-fourth of the cases.

Generally the onset is insidious. Most patients have slight fatigue, slight fever, weight loss, moderately increased erythrocyte sedimentation rate, moderate hypochromic anemia, eosinophilia, signs of myocardial and ocular damage, and disturbances of one or more of the larger joints. Skin lesions are common and consist of transient exanthema resembling rubella or measles. Occasionally, high temperature and leukocytosis are the first signs.

In about half of the patients, hemolytic streptococci are identified in throat cultures. The sheep-sensitized cell agglutination reaction is positive in more than 90 per cent of patients.

Articular manifestations are often recurrent. The knees are affected most frequently, then the ankles, wrists, hips, and cervical spine. Small joint disease becomes more common immediately before and during puberty.

The joint capsule is thickened and the synovial membranes are swollen and vascularized. Arthroscopic examination reveals pitting of the cartilages and villous proliferation of the synovial membranes. Roentgenograms show osteoporosis. Periarticular swelling is usually apparent. If therapy is delayed, bone deformities ensue.

Visceral signs are also frequently intermittent. Dilation of the heart, electrocardiographic changes, systolic murmur, and tachycardia are associated fairly often. Occasional complications are hepatitis, nephritic disease, and pneumonia. Ocular disease is more common in children than in adults.

Prolonged hospital care with bed rest, bracing, physiotherapy, and functional therapy of the joints and

MEDICINE

and the Biologic Sciences



limbs is advisable. Plaster of paris bandages, splints, and pin traction are used as necessary. Crutches, orthopedic shoes, and similar aids may be warranted. Sources of chronic infection should be eradicated and blood transfusions are given if necessary. Salicylates are given to all patients and appear to be as effective as gold. Treatment with cortisone has greatly improved the prognosis for children.

The prognosis is not poor if the child is kept in bed and receives adequate meals and physiotherapy. The active phase of the disease usually lasts two to three years in patients who eventually become symptom free. When the active phase persists for more than three years, invalidism usually results. The prognosis is best if treatment is started early. About 75 per cent of patients who receive therapy within the first year after onset recover completely. Physiotherapy to prevent contractures and deformity has been the main factor in improving the prognosis. Medication relieves symptoms and improves capacity for activity that does not arrest the progress of the disease or improve the end result.

Edstrom, Gunnar: *Rheumatoid*

Arthritis and Stills Disease in Children, Arthritis and Rheumatism
1:497-504 (September) 1958.



Heart Failure

The most important single component of the heart is the myocardium. The human heart fails because of loss of myocardial contractility which may be caused by defective coronary blood supply, or fatigue of the metabolic intracellular energy system after long-sustained and unphysiologic volume or pressure loads.

Volume loads pertain to high stroke volumes ejected against low vascular resistance or pressure gradients. Pressure loads are created when normal or reduced stroke volumes are ejected against high resistance. The left ventricle manages most efficiently against pressure loads and the right ventricle works best with volume loads. Conversely, the left ventricle fails more rapidly under volume loads, the right ventricle under hydrostatic pressure stress.

Volume loads on the whole are produced by thyrotoxicosis, thiamine deficiency, arteriovenous aneurysm, anemia, pregnancy, and liver disease. If the heart fails, symptoms are left ventricular in origin, since increased flow affects the left ventricle most severely. Pulmonary hypertension may develop secondarily and shift part of the load to the right ventricle. The cardiac index is usually greater than 5 liters per minute per square meter and the circulation is hyperkinetic. If the etiologic factor is recognized, complete cure is possible in most instances.

Excessive volume loads on the left ventricle are caused by left-to-right intracardiac shunts due to patent ductus arteriosus or ventricular septal defects, and aortic or mitral insufficiency. With valvular insufficiency the left ventricle must eject enough blood to compensate for the volume that regurgitates back through the valve. The stroke volume increases therefore and the left ventricle dilates. In this manner, aortic regurgitation produces

the most massive left ventricular dilation seen in clinical medicine.

When aortic valvular obstruction or systemic hypertension increases the pressure load on the left ventricle, the cavity becomes hypertrophic and continues to beat efficiently. Hypertrophy allows the needed additional intraventricular pressure during systole. Myocardial contractility does not diminish and the ventricle does not dilate and fail until coronary flow becomes unbalanced.

Diseases that place pressure loads on the right ventricle include pulmonary hypertension, primary or secondary to mitral obstruction, left ventricular failure or pulmonary disease; and pulmonary valve obstruction. In these conditions, the effective cardiac output is normal or diminished and the cardiac disturbance is described as low-output failure.

Low out-put failure is characterized by low effective stroke volume but high total right ventricular stroke volume. As the right ventricle hypertrophies, the tricuspid valve becomes more incompetent. With increasing pressure loads, more and more blood is propelled in retrograde fashion. The effective forward output is the difference between total ventricular stroke volume and the regurgitant flow.

Sinclair-Smith, B. C.: *Physiological Mechanisms in Heart Failure*, M. J. Australia 2:757-759 (August) 1958.



Antibiotics in Cosmetic Preparations

Most observers agree that antibiotics generally useful in the treatment of systemic infections should not be used in cosmetics. The risk of sensitization of cosmetic users to such antibiotics could be dangerous. Even more important is the possible increased incidence of acquired microbial resistance to such drugs from the widespread use of cosmetics containing them.

Recently it was suggested that agents such as bacitracin, neomycin, polymyxin, and tyrothricin be per-

mitted in cosmetics. Thus antimicrobial action would be secured against a wide spectrum of microorganisms and the antibiotics used would rarely be required later on for the treatment of systemic infections.

These antibiotics seem to have a relatively low potential for sensitivity when applied to the skin. By and large, they are believed not to be potent sensitizers or irritants. It is reasonable to assume, however, that the frequency of sensitization and/or irritation might increase if these agents are applied indiscriminately over a prolonged period of time in an ever-mounting number of persons. Their use in cosmetics would augment the number of people at risk. The time and duration of exposure would be increased because cosmetics are applied one or more times each day.

It is known that there are possible toxic effects from bacitracin, polymyxin B, neomycin, and tyrothricin after absorption through the skin. All these antibiotics are known nephrotoxins.

There is a possibility that the indiscriminate use of these antibiotics may induce the development of microbial resistance to these agents. The major result of the widespread use of these antibiotics may be expected to be the elimination of the more sensitive bacteria, and its replacement by one that is resistant to the action of these agents.

It seems logical to assume that as antibiotics are used over longer periods of time and with a larger population at risk, the microbial flora found in the environment of that population will be made up more and more of strains of microorganisms inherently resistant to the antibiotics. Under these conditions, antibiotic-susceptible strains will tend to be eliminated and it makes little practical difference whether the resistance replacements are those that acquire resistance to the antibiotics by their own devices or are those that survive because they are inherently resistant to these agents.

Nelson, Carl T., and Sulzberger, Marion B.: *Inclusion of Antibiotics*

in *Cosmetic Preparations*, JAMA 169:1626-1627 (April 4) 1959.



Approach to Knowledge of Death

Patients vary in their desire to discuss death. Some may anticipate their near demise yet never directly discuss it. Others may be so afraid (perhaps of something specific such as being buried alive) that they must talk.

Often it takes time to verbalize one's fears. In announcing the fact of death, therefore, one must ponder the wisest course of action. Perhaps the only reasonable approach is to decide how you would personally react to this announcement, then decide how you would like to be told. Modify this with a knowledge of the patient's or his relative's reactions. Often these reactions must be evaluated in a short time.

Some persons can be quite realistic in approach, even to the conquering of the omnipresent emotions (fear of the unknown and resentment toward leaving life as we know it) realizing they must set certain personal and business affairs in order.

Thus there is no approved course of action in approaching patients. Each has personal requirements. Significantly, the physician's contribution, the amount of time spent, and the emotional outcome will vary with his personal convictions and his philosophy regarding his own death.

If a man must die, it is reasonable that he should be informed of the possibility. There is no comfortable way to do this. Neither is there reason for tactless exposure of truth nor excuse for one to avoid or shift this responsibility.

Patients or relatives are not interested in cold unvarnished facts. They are interested in possibilities. A direct question may deserve a direct answer, but frankness can be tempered with sympathy and tact. A doctor can indicate the nearness of death without removing all vestige of hope.

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seldom finds death unpleasant, for most patients are not in pain during the final moments.

Exodus should be surrounded with dignity. The environment should be light and airy. Patients should never be left alone, for this is one of the commonest fears. Thirst is a common symptom and small chips of ice or a thin coat of petroleum jelly applied to the lips and tongue promote comfort. Food or drink is not advisable, for the body relaxes in death. Labored respiration is assisted by elevation of the head, but oxygen therapy is of questionable value; not only is the apparatus annoying but it is possible that progressing hypoxia is beneficial.

Bloomquist, Edward R.: *If a Man Must Die*, *New Physician* 8:35-37 (January) 1959.



Hypertension— Salt Metabolism

It is an established fact that sodium chloride metabolism is abnormal in patients with essential hypertension. These patients may have a slightly elevated serum sodium concentration, expanded total body sodium content, and increased amounts of sodium and water in their arterial walls. Hypertension may be alleviated by sodium depletion.

Many studies confirm the fact that chlorothiazide, a potent natriuretic agent, may exert an antihypertensive effect in both hypertensive animals and in patients. The drug potentiates the effect of various antihypertensive regimens. The concomitant administration of chlorothiazide reduces the requirements for ganglionic blocking agents in the treatment of hypertension. Patients who have undergone sympathectomy appear to be unusually responsive to the lowering effect of chlorothiazide on the blood pressure.

The increased renal tubular rejection of sodium chloride and water in response to salt loading which is present in patients with essential hypertension is felt to be the result of the elevated blood pressure and not its cause. There is no evidence that water

excretion, occurring in excess of sodium excretion, causes a "relative retention" of sodium. In essential hypertension the sodium content of certain compartments of tissues, possibly including vascular smooth muscle, may be increased. This may lead to the rise in blood pressure. The effectiveness of chlorothiazide in the treatment of some patients with hypertension may be through the ability to deplete these tissues of sodium. In other patients it appears to act through depletion of the plasma volume.

Weller, J. M., and Hoobler, S. W.: *Salt Metabolism in Hypertension*, *Ann. Int. Med.* 50:106-114 (January) 1959.



Malignant Melanomas

In prepubertal children pigmented moles are usually benign. Rarely do they metastasize. In patients at or beyond puberty such lesions should always be suspected of being malignant.

Melanomas frequently arise from nevi of the junctional or compound type. Moles or nevi found in areas where melanomas are common, such as the external genitalia or soles of the feet, or where chronic irritation is likely, should be excised as a prophylactic measure. These should be studied microscopically. Even small, low-grade, superficial malignant disease may lead to widespread metastases.

The proper surgical treatment of malignant melanoma requires wide and deep local excision. Skin grafting is performed if primary closure of the wound is difficult. When the tumor is found near a lymph node group, as in the neck, axilla, or groin, en bloc dissection of the lesion and lymph nodes should be done. When continuous dissection is not possible, as with lesions on the sole of the foot, lower arm or back, wide local removal of the primary lesion and regional node dissection may be performed through separate incisions, at the time of the initial surgery.

Melanomas in the midline or in areas midway between the axilla and groin may involve two groups of lymph nodes. In such instances, dissection of both node groups at one time is not beneficial. These patients should be reexamined at regular intervals, and, if signs of node involvement are noted, the involved side should be excised. However, if metastases are bilateral at the time of surgery, bilateral node dissection in continuity is done.

The over-all five-year survival rate is about 21 per cent. In the presence of metastases at the time of surgery the rate is 14 per cent. When no metastases are found the rate is about 40 per cent.

Pollack, Robert S.: *The Surgical Treatment of Melanoma*, *California Med.* 82:444-446 (June) 1955.



Histoplasmosis

The results gathered from the skin testing and chest roentgenographic survey programs in the United States suggest that perhaps as many as 20,000,000 people have been infected with *Histoplasma capsulatum*. Histoplasmosis should always be considered in the differential diagnosis of pulmonary disease because many people have migrated into and from the endemic areas.

The primary pulmonary infection begins with implantation of the fungus in the alveoli. This produces a nonspecific granulomatous reaction. The lesion progresses to a coagulative type of pneumonia which becomes encapsulated. The isolated round lesion in the lung may completely resolve or persist.

Progression from the initial pulmonary lesion may occur immediately or only after reinfection. The disease may spread peripherally to the pleura, forming a plaque, centrally through the lymphatics or veins, producing lesions in the surrounding lung tissue or infiltrating hilar lymph nodes, or throughout the entire body. Death is usually due to invasion of the adrenals.

(Continued on page 285)

An active histoplasmosis, acute or chronic, varies from a slight respiratory infection to general systemic illness. Inactive and discrete disease is usually asymptomatic. However, since the lesions heal with pronounced perifocal fibrosis, obstructive phenomena with secondary infection may develop, producing signs and symptoms.

Primary histoplasmosis is of three types:

(1) The disease is usually acute, asymptomatic, and nonfatal. Healing occurs without evidence of pulmonary involvement or with multiple fibrotic and calcified lesions in the lungs and spleen.

(2) Acute, symptomatic, nonfatal histoplasmosis, which may be slight or severe, is frequently misdiagnosed as influenza or primary atypical pneumonia. The onset is sudden, with a nonproductive cough, chest pain, and fever. Recovery is associated with fibrosis and calcification within the lungs. The disease occasionally becomes chronic and progressive and rarely spreads throughout the body.

(3) Acute, symptomatic, and fatal histoplasmosis is manifested by fever, anemia, leukopenia, occasionally a leukemoid reaction, weakness, and hepatosplenomegaly. Infection disseminates widely and may be rapidly fatal. Still some of these patients survive for years.

Primary slight histoplasmosis is a self-limiting disease and requires no treatment. No drug therapy is effective for the serious acute or chronic progressive or disseminating forms. Surgical excision of local pulmonary lesions appears safe.

Curry, Francis J., and Wier, James A.: *Histoplasmosis*, *Am. Rev. Tuberc.* 77:749-763 (August) 1958.



Ultrasound In Medicine

In general medicine ultrasound is finding some beneficial applications. Compared with diathermy, ultrasound is easier to apply, necessitates shorter treatment periods, and has better beaming characteristics. The margin

of safety is narrower, however, than with short-wave or microwave diathermy.

Physiologic effects are produced chiefly by thermal means. Physical energy is conducted to a deep site and converted into heat as in other forms of diathermy. The transverse waves are more rapidly absorbed at interfaces between tissues. Ultrasound is absorbed rapidly by bone and comparatively slowly by fat and muscle tissue in between. At currently used frequencies, the depth of penetration in muscle is 4 to 5 centimeters.

Ultrasound is most successful when used as an adjunct in the treatment of painful and spastic muscular and skeletal disorders resulting from myositis, fibrositis, bursitis, arthritis, peri-arthritis, or tenosynovitis. Treatment may also relieve painful neural disorders and soften scar tissue contractions.

Ultrasound also benefits patients with acute and chronic shoulder lesions, degenerative spine and hip joint diseases, ligamentous and muscular strains in the lower back, rheumatoid spondylitis in the early stages, and radiculitis due to irritative trauma to the nerve root, as in intervertebral disc protrusion.

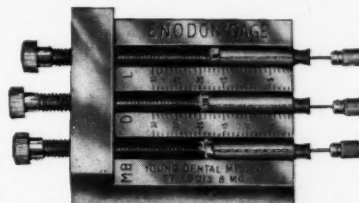
The sensory condition of the area to be treated should be tested before ultrasound is applied because over-dosage is indicated by pain or discomfort.

Ultrasound should not be used over the gonads, the pregnant uterus, epiphysis of growing bone, areas of neoplastic or acute infections, the stellate ganglion, large autonomic structures, or the heart. Great care is essential if ischemic areas are treated. It is recommended that an irradiated area should not be exposed to ultrasound for six months.

Freed, Murray M.: *Ultrasound in Medicine*, *M. Clin. North America* 42:1205-1216 (September) 1958.

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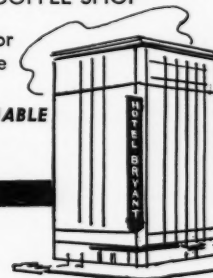
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Men: Face Your Menopause!

THERE is no unanimity on the case of the male menopause. Some physicians believe that there is such an entity; others are just as sure that it is a myth. From my own observations among my contemporaries I would guess that there is a "change of life" in men.

In the male subject there is no objective evidence of the event, such as the cessation of menstruation. Men, however, seem to suffer from and be pilloried by the same subjective complaints in middle life as do women: nervousness, anxieties, depression, feelings of inadequacy, insomnia. There may also be vague symptoms referable to the cardiovascular and gastrointestinal systems and a not infrequent dash of real or imagined impotence.

Although the procreative life in woman is usually ended by age 40 (because of hormonal changes), the potency of men (if we are to believe lurid newspaper accounts), may extend into the senescent years. Some men have been heard to express ribald skepticism of the paternity claims of men in their 80's and 90's who have been the subjects of these newspaper stories. Nonetheless, the sexual cycle in men is longer than in women. That should mean, therefore, that the male menopause appears later—in the 50's or 60's.

Recently a casual acquaintance in his late 40's was complaining to me about his wife—not an uncommon form of conversation. He pictured the woman as easily brought to tears and provided with an excessive supply of suspicions and quick to express them. I have never met the woman and she may be all the unflattering things that the husband described.

There are several methods to use to

react to a bellyaching husband of this kind: to ignore him, to agree with him, or to try to understand him. The latter is the harder course to follow. In this case the casual acquaintance selected the wrong shoulder to cry on. My patience is short for men who make semi-public complaints about their wives. Men who are misunderstood by their women are usually understood only too well!

It is a duty of friends to listen to the litany of woes and try to drop an occasional word of cheer and help if that is possible. To carry this brotherhood of help to every passing acquaintance is pressing the virtue of understanding too hard. There are people who make a career of marriage counselling under professional auspices. They should be consulted in time of conflict. They do not, however, hold their interviews at a bar or in a locker room.

When I asked this chap if his wife was in the menopause he reacted as if he had come face to face with a mind reader.

"Yes," he replied with some embarrassment, "I guess so. Why?"

I told him that the menopause was a traumatic event that was often accompanied by weird imaginings and sometimes with bizarre psychosomatic reactions. This he had heard vaguely before. I also let him know that if he lived long enough he might himself experience in the next 10 or 15 years a train of ailments that were quite similar: vague and ill-defined physical complaints and fearsome emotional reactions. This suggestion was a violent blow to his ego.

The ego structure of men is often so inflexible that they envision themselves as being indestructible supermen immune to stress. The mortality tables should tell them how wrong they are in this opinion. The shorter life span of men should convince them that they are the biologic weaker of the sexes. The sooner we face up to this fact the more serene our lives should become. This means, of course, a bet-

(Continued on page 288)

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CLINICAL AND LABORATORY SUGGESTIONS

(See pages 276 and 277)

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ter adjustment within ourselves, and admission of our biologic inferiority. It could also mean improved interpersonal relations—particularly with our wives.

All life processes are in flux and flow. If men do have a climacteric it is no disgrace, but a biologic event to be faced with courage.

Brainstorming

The popularity of brainstorming has abated somewhat. The principle is still a sound one: to let the subconscious flow freely and reach into nature's storage cabinet and withdraw the associations of past experiences without regard to formal logic. The principle is to allow ideas to spring and flow unfettered in free association from the subconscious. It is a kind of chain reaction: without prejudgments and without negative attitudes.

According to Charles H. Clark in his book BRAINSTORMING it is a method of "uninhibited idea making." There are two deterrents to this flow of ideas:

(Continued on page 290)

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1. THE NEW YORK HOSPITAL—CORNELL MEDICAL CENTER. PRESENTED AS A SCIENTIFIC EXHIBIT AT THE AMERICAN DENTAL ASSOCIATION ANNUAL SESSION, (NOVEMBER) 1957.

2. BEHRMAN, S. J.; FATER, S. B.; GRODBERG, D. L.; AN EVALUATION OF OXYGENATING AGENTS IN THE TREATMENT OF GINGIVAL INFLAMMATION. J. DENT. MED., (OCTOBER) 1958.

SENER, A. D., B.S., D.D.S., M.S.; A CLINICAL EVALUATION OF AN OXYGENATING AGENT. ORAL SURGERY, ORAL MEDICINE AND ORAL PATHOLOGY, (MARCH) 1959.

"Killer phrases" and "Apologetic phrases."

Among the "Killer phrases" listed by Mr. Clark are:

"—We have never done it that way before.

"—It won't work.

"—We haven't the time.

"—All right in theory, but can you put it into practice?

"—Too academic.

"—You don't understand our problem.

"—It has been the same for 20 years

so it must be good.

"—Don't move too fast.

"—Let's wait and see.

"—I don't see the connection.

"—Political dynamite.

"—We've never used that approach before.

"—It will offend.

"—Yes, but..."

We have all heard these "killer phrases and apologetic phrases" and most of us have used them when we did not want to think or change our way of doing something. We all re-

sist changes and want to feel secure in the thoughts and methods that are familiar to us. To plunge from the comfortable and familiar into the new and unknown is often a disturbing experience.

Most of us have sat on committees where the man with an idea was an unwelcome presence if he disturbed our usual pattern of thought or action.

Attend a lecture or a clinic on a new dental subject and listen for the "Killer phrases" in action:

—It's unsound.

—It's too theoretical.

—My technique is better.

—Let somebody else try it first.

—My patients won't stand for it.

—That was tried before and it didn't work.

—There's nothing new about that.

—You would have to get higher fees.

—It's not good dentistry.

For every development in dentistry in the last 25 years I have heard the "Killer phrases" applied to these subjects when they were first introduced:

Acrylic dentures

Implant dentures

Fluoridation

Hydrocolloid and rubber-base impression materials

Improved anesthetics

Diamond stones and carbide burs

High speed equipment

Bitewing x-rays

Voluntary dental insurance

Biochemical approach to dental disease

Hypnosis and psychosomatics

New drugs and therapeutic agents

Temporomandibular joint syndrome

Occlusal equilibration

Not one of these developments could have been created by a committee. Every one first came as an idea in the mind of one man who believed, who persevered, "whose dreams waken him in the night while others lie contentedly asleep."

One of the hardest disciplines for the human mind, with its strong undercurrent of emotions, is to struggle for freedom from prejudice and preconception.

—E.J.R.

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Tranquilizers and Operative Management

Question

Should elective operations be deferred for eight days if a patient has been taking tranquilizing medication?

Discussion

"Tranquilizer" is a general term applied to a group of drugs which includes antihypertensives, sedatives, hypnotics, and agents that produce emotional calmness without accompanying depression. A few, such as promethazine, are used in premedication and as a supplement during general anesthesia. Use of others should be discontinued before operation because of dangerous side-effects.

Possible Reactions From Drugs

When the patient has been taking a Rauwolfia alkaloid, severe hypotension and bradycardia may occur on induction of anesthesia; therefore, therapy should be stopped three or four days before elective operations. If emergency care is necessary, 0.5 milligrams of oxyphenonium and 5 milligrams of methamphetamine may be given intravenously before induction.

Hypotension and Peripheral Vaso-dilatation—The phenothiazine derivatives such as chlorpromazine, promazine, and mepazine often cause postural hypotension and peripheral vasodilatation, which are hazardous during anesthesia. Use of these drugs should be discontinued two days before elective procedures.

No Side-Effects with Promethazine—If hypotension occurs during anesthesia, Trendelenburg position and large doses of phenylephrine are used. Promethazine is one drug in this group with virtually no disturbing toxicity or side-effects when given in therapeutic doses. It can be safely used before and during anesthesia.

Rare Reactions Reported from Meprobamate—This is a hydroxypropane derivative with marked seda-

tive and muscle-relaxing action. Rare cases of allergic reactions and non-thrombocytopenic purpura have been reported. No contraindication exists to its use immediately prior to operation.

Miscellaneous Therapy May be Continued—Hydroxyzine therapy may be continued until operation, and miscellaneous sedatives such as ethchlorvynol, ethinamate, glutethimide, and methypylon are safe for use immediately prior to operation.

Adapted from Questions and Answers, *Journal of the American Medical Association* 168:1761-1762 (Nov. 21) 1959.

Pulmonary Infarction After Dental Extraction

CRAWFORD W. ADAMS, M.D., and

JAMES M. HUDGINS, M.D.,

Nashville, Tennessee

Comment

The superior venous circulation is rarely considered a source of pulmonary infarction. Since there is often a delay of one or two weeks before the symptoms of embolization appear, it is not surprising that this disease of the lung is not associated with the earlier oral trauma. This suggests an important unrecognized cause of pulmonary disease.

Erroneous Diagnosis Possible—The tendency of physicians to dismiss episodes of chest pain, fever, and cough as a "virus pneumonia" may allow this disease to go unrecognized. The ineffectiveness of antibiotics will only serve to confirm the erroneous diagnosis. An accurate diagnosis, based on recognition of the antece-

dent oral trauma, or a careful search for signs of cervical venous disease may be expected to reveal the correct etiology. This is more than an academic exercise, because proper treatment should include the early use of the anticoagulants.

Complete Examination Important—Careful inspection of the neck region for swelling, tenderness, or other evidence of venous infection or obstruction should be undertaken, in addition to routine examination of the lower extremities, with all episodes of unexplained pulmonary infarction.

Summary

Two instances of pulmonary infarction occurred after dental extraction and phlebothrombosis of the cervical veins. Both patients recovered. The superior as well as the inferior venous circulation should be carefully evaluated as a source of unexplained pulmonary infarction, and the distinction between pulmonary embolism arising from phlebothrombosis and "virus pneumonia" after dental extraction should be emphasized because of the importance of early recognition and treatment.

Adapted from *Journal of the American Medical Association* 170:412 (May 23) 1959.

